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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/961,048	09/20/2001	Michal J. Cierniak	42390P11912	5003

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EXAMINER

LAO, SUE X

ART UNIT	PAPER NUMBER
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2126

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/961,048

Applicant(s)

CIERNIAK, MICHAL J.

Examiner

S. Lao

Art Unit

2126

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

1. Claims 1-18 are presented for examination.
2. It is noted that copies of the non-patent prior art documents cited in the information disclosure statement filed 4/8/2002 have not been received, and therefore have not been considered by the examiner.
3. Claims 2-3 and 16-18 are objected to because of the following informalities: Claim 2, line 6 recites "a implementation" which appears to be "an implementation". Claim 16, line 6, "A method of unifying equivalent data structures comprising:" should be deleted.
4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent.
5. Claim 1 is rejected under 35 U.S.C. 102(a) as being anticipated by Stoodley et al (U S Pat. 6,182,282).

As to claim 1, Stoodley teaches a data structure comprising: an object (object 180), wherein the object includes a pointer to a vtable (hybrid VFT, fig. 2A, 4), wherein the vtable includes a plurality of pointers (addresses of B::X(), C::Y()), wherein the plurality of pointers point to a plurality of classes (class B, class C) and wherein the plurality of classes include at least one unified type hierarchy (B is of type 'old', C is of type "new"). See col. 8, line 66 – col. 9, line 40; fig.s 2A, 4, 5.
6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4-14, 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stoodley et al.

As to claim 4, Stoodley teaches the unified type hierarchy (classes B, C, D, fig. 1) contains classes of different/incompatible virtual function data structures (col. 1, lines 8-10; produced by old and new compilers, col. 8, line 66 – col. 9, line 1). Stoodley also teaches that such different/incompatible virtual function data structures result from multiple object-oriented programming environments/languages including C++, Java and CFRONT (col. 1, lines 14-15; col. 3, lines 23-27). Therefore, it would have been obvious to implement such different/incompatible virtual function data structures with first programming language and a second programming language. When the teaching is modified as such, the unified type hierarchy would have included a data structure (hybrid VFT) recognizable by a first programming language and a second programming language.

As to claims 5-6, the teaching of Stoodley as modified (note discussion of claim 4) would have been applicable to / use for two or more hierarchical programming languages, which are object-oriented programming languages.

As to claim 7, note discussion of claims 4-6, and Stoodley teaches the object-oriented programming languages include Java, C++. Since C#, Smalltalk and Eiffel are common object-oriented programming languages with differing virtual function data structures which is the subject of Stoodley, it would have been obvious to include these languages into the system of Stoodley as modified.

As to claim 8, Stoodley teaches a root (flag) identifying each programming environment (new or old, col. 11, lines 45-48). Note discussion of claim 4 for implementing differing programming environments with differing programming languages.

As to claim 9, Stoodley teaches a method of identifying equivalent data structures (virtual functions) comprising: receiving a plurality of data structures (virtual functions X(), Y(), Z() of classes B, C, D), comparing the implementation of each one of the plurality of data structures (determine inherited virtual functions); and identifying at least two of the plurality of data structures that have identical implementations (X() of class D and X() of class B; Y() of class D and Y() of class C). See Col. 8, lines 16-52. Regarding that each one of the plurality of data structures are from a different one of a plurality of programming languages, note discussion of claim 4 for implementing each of the differing/incompatible virtual function data structures with a respective programming language.

As to claims 10, 13, 17, note discussion of claim 7.

As to claim 11, it is covered by claim 9 except for processor, I/O system, bus and memory, which would have been inherent to the system of Stoodley, or obvious to be included.

As to claim 12, Stoodley teaches execution in Java environment (col. 1, lines 14-16), which is typically a distributed architecture. Therefore, it would have been obvious to include a network adapter into the system of Stoodley as modified.

As to claim 14, note discussion of claim 9 for steps of receiving, comparing and identifying. Stoodley further teaches creating a unified data structure (hybrid VFT) wherein the unified data structure includes: a single implementation (function X()) of the identified at least two data structures (X() of class B and X() of class D); and a plurality of names of the identified at least two data structures (B::X() and D::X()). See Col. 8, lines 16-52; col. 8, line 66 – col. 9, line 40; fig.s 2A, 4, 5.

As to claim 16, note discussion of claim 14. Further note discussion of claim 11 for processor, I/O system, bus and memory.

8. Claims 2-3, 18 would be allowable if rewritten to overcome the objection(s) set forth in this Office action and to include all of the limitations of the respective base claims and any intervening claims.

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9. Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sue Lao whose telephone number is (703) 305-9657. A voice mail service is also available at this number. The examiner's supervisor, SPE Meng-Ai An, can be reached on (703) 305 9678. The examiner can normally be reached on Monday - Friday, from 9AM to 5PM. The fax phone number for the organization where this application or proceeding is assigned is (703) 872 9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.

Sue Lao

October 15, 2004



SUE LAO
PRIMARY EXAMINER